

c.) **Amendments to the claims.**

Please amend claims 1-13 as follows:

Claim 1. (currently amended) A mass spectrometry process for analyzing substance mixtures a mixture of substances using a triple quadrupole mass spectrometer, said substance mixtures being wherein said mixture is ionized before the analysis, which comprises the following steps:

- a) selecting a mass/charge quotient (m/z) of an ion formed by ionization in a first analytical quadrupole (I) of the mass spectrometer,
- b) fragmenting the ion selected under (a) by applying an acceleration voltage in a further following quadrupole (II) which is filled with a collision gas and functions as a collision chamber,
- c) selecting a mass/charge quotient of an the fragment ion formed by the fragmentation (b) in a further downstream quadrupole (III), the process steps (a) to (c) being run through at least once, and
- d) analyzing the mass/charge quotients of all additional ions present in the substance mixture as a result of the ionization, wherein the following quadrupole (II) being is filled with a collision gas but no acceleration voltage being is applied during the analysis;

and wherein the steps (a) to (c) and step (d) may also be carried out in reverse sequence.

Claim 2. (currently amended) The process according to of claim 1, wherein the ionization of the substance mixture is upstream of a chromatographic separation.

Claim 3. (currently amended) The process according to of claim 1 or 2, wherein the chromatographic separation is an HPLC separation.

Claim 4. (currently amended) The process ~~according to claims 1 to 3 of claim 1~~, wherein steps (a) to (d) are run through at least once within from 0.1 to 10 seconds.

Claim 5. (currently amended) The process ~~according to claims 1 to 4 of claim 1~~, wherein steps (a) to (d) are run through at least once within from 0.2 to 2 seconds.

Claim 6. (currently amended) The process ~~according to claims 1 to 5 of claim 1~~, wherein the ionization is effected by evaporating the ~~substance~~ mixture and ionizing in ~~the a gas phase, by desorbing the substance mixture on a surface or by atomizing the substance mixture in an electrical field~~.

Claim 7. (currently amended) The process ~~according to claims 1 to 6 of claim 1~~, wherein the ionization is effected by atomizing the ~~substance~~ mixture in an electrical field.

Claim 8. (currently amended) The process ~~according to claims 1 to 7 of claim 1~~, wherein analysis is effected in step (a) between 1 and 100 mass/charge quotients of different ions formed by ionization and selected.

Claim 9. (currently amended) The process ~~according to claims 1 to 8 of claim 1~~, wherein the ~~substance~~ mixture is of biological or chemical origin.

Claim 10. (currently amended) The process ~~according to claims 1 to 9 of claim 1~~, wherein the ~~substance mixtures are mixture is~~ derivatized before the analysis ~~or before the chromatographic separation according to claim 2 or 3~~.

Claim 11. (currently amended) The process ~~according to claims 1 to 10 of claim 1, which is carried out manually or automatically wherein the substances within the mixture are not required to be purified~~.

Claim 12. (currently amended) The process ~~according to claims 1 to 11 of claim 1~~,

which is used in further comprises a high-throughput screening.

Claim 13. (currently amended) The process according to claims 1 to 12 of claim 1, wherein the fragment ion analyzed in step (c) and the (m/z) quotients analyzed, in step (d), of is quantified for all ions present in the substance mixture or the fragment ion analyzed in step (c) or the (m/z) quotients, analyzed in step (d), of all ions present in the substance mixture are quantified.

Please add the following as new claims 14-20:

Claim 14. (new) The process of claim 2, wherein the mixture is derivatized before the chromatographic separation.

Claim 15. (new) The process of claim 1, wherein the ionization is effected by desorbing the mixture on a surface.

Claim 16. (new) The process of claim 1, wherein the (m/z) quotient analyzed in step (d) is quantified for all ions present in the mixture.

Claim 17. (new) The process of claim 1, wherein both the fragment ion analyzed in step (c) and the (m/z) quotient analyzed in step (d) are quantified.

Claim 18. (new) The process of claim 1, wherein both the fragment ion analyzed in step (c) and the (m/z) quotient analyzed in step (d) are quantified for all ions present in the mixture.

Claim 19. (new) A mass spectrometry process for analyzing a mixture of substances, which does not require advance purification of said substances, comprising:

- a) ionizing said mixture by evaporating and ionizing the mixture in a gas phase, by desorbing the mixture on a surface, or by atomizing the mixture in an electrical field;
- b) selecting a mass/charge quotient (m/z) of an ion formed by ionization in a first analytical quadrupole (I) of a triple quadrupole mass spectrometer;
- c) fragmenting the ion selected by applying an acceleration voltage in a following quadrupole (II) which is filled with a collision gas and functions as a collision chamber;
- d) selecting a mass/charge quotient of the fragment ion in a downstream quadrupole (III); and
- e) analyzing the mass/charge quotients of additional ions present in the mixture as a result of the ionization, wherein the following quadrupole (II) is filled with a collision gas but no acceleration voltage is applied during the analysis;

and wherein steps (b) to (d) and step (e) may be carried out in reverse sequence.

Claim 20. (new) The process of claim 19, wherein one or more of the substances within the mixture are identified and quantified.